8.0 FLOOD FREQUENCY ANALYSIS

A flood frequency analysis for Cameron Run was performed using existing stream gage data recorded at the USGS stream flow gage discussed in Section 5.2 and shown in Figure 1.1. This analysis follows the federally recommended guidelines described in Bulletin 17B, "*Guidelines for Determining Flood Flow Frequency*" published by the Interagency Advisory Committee on Water Data.

Annual peak flow data collected at the USGS stream flow gage were compiled for water years 1953 through 2006. Using the methodologies prescribed by Bulletin 17B, generally conforming to a Log Pearson Type III distribution, a frequency curve was developed with the data. During the analysis, several issues regarding the data set arose. These issues included: intended use of the frequency data; validation of the June 25, 2006 flood event; gage placement; minor gaps in the data set; management of the Lake Barcroft dam; and urbanization of the watershed during the period of record. Discussion of the resolution of these issues and other technical data is located in the Flood Frequency Analysis Report located in Appendix I.

The final flow frequency relationship at the USGS stream flow gage, presented in Table 8.1, was generated using industry standard techniques including the statistical modeling package PeakFQ developed by the USGS and adhering to the guidelines of Bulletin 17B.

Table 8.1. 2006 Flood Frequency Analysis Based on 1956 thru 2006 Data Set

Recurrence Interval (years)	Probability	Peak Flow (cfs)
2	0.5	4,157
5	0.2	6,993
10	0.1	9,266
25	0.04	12,600
50	0.02	15,430
100	0.01	18,570
500	0.002	27,210

The data presented in Table 8.1 was used to develop the frequency curve shown in Figure 8.1. The plots depicted in Figure 8.1 include the best fit frequency curve and the upper and lower 95% confidence limits. As shown on Figure 8.1, it was determined that the peak flows associated with the June 2006 flood event have a recurrence interval of approximately 60 to 70 years.

Figure 8.1. Frequency Curve for USGS Gaging Station 01653000 , Water Years 1956 - 2006